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14 September 2015

Sarah Zorn
Planning and Economic Development
25 West Fourth Street, Ste. 1100
St. Paul, MN 55102

Project No.: 15538.00
Re: Structural Condition Review of the building at 700 4th St. E.

Dear Sarah:

We visited the existing house at 700 4th St. E. on Tuesday, August 25th, 2015. The purpose of our visit was to form an opinion of the building condition and to identify any areas of damage, deterioration, or deficiency and to assist the owner in planning the future of the house. The following is a summary of our observations and opinions:

Scope
This report concerns only the structural frame and elements that are an integral part of the load resisting system for the building. We did not observe and report on the building electrical systems, mechanical systems, fire protection, egress, and life safety compliance with the building code.

Our review concerned the basement level and the foundation walls that could be observed directly within that space, any visible roof systems, any visible wall structures, and any visible beams or joists. Observations that were performed are considered a cursory "walk-through" of the building. The performance of the structural system and framing elements was judged by visual observation only. This work should not be considered a detailed investigation of the building or of specific elements of the building framing system. During our walk through no finishes were removed to expose structural systems.

Calculations were not performed on the total building system nor were the apparent load capacities of the floor or roof determined as a part of this report.

Qualifications of the Personnel
Joe Cain P.E. is the author of this report, the lead investigator, and the Structural Engineer of Record (SER). Joe has 30 years of experience in the field of structural engineering and has performed condition reviews as the SER on numerous buildings that are similar to the subject building. Travis Stanley E.I.T. has aided in the observation work, analysis, and research and has contributed to the preparation of the report.

Methods of Investigation
The method of investigation was by casual observation and was limited to those structural elements that were exposed to view. However, much of the structural system was covered by finish material, in which case the performance of the finish material was assumed to reflect the performance of the structural elements to which the finish material was attached. No attempt was made to perform an exhaustive investigation of all structural elements. No finish material was removed or damaged to expose the underlying structural elements. No existing as built documents were available for our use. Nor were we made aware of any previous reports related to the structural condition of the building or investigation of building elements.

Building Description
The building is a two story house with a full basement. The original structure was constructed on or about 1886. The roof is constructed with hand framed lumber joists which are supported on wood stud bearing walls at the building perimeter.

The foundation walls that could be observed were constructed with rubble limestone masonry below grade. The first floor is supported at the interior of the basement level with heavy timber beams, supported on timber columns that extend to the basement floor. The basement floor areas that were not covered were observed to be concrete slab on grade. It is assumed that the building walls and interior columns rest on spread footings.

Observed Conditions
In general, the structural elements of the building framing and foundation were judged to be in poor condition. There were conditions of deterioration or damage noted in the observations and will be described below in more detail.

The retaining wall at the front of the house is cracking and needs to be replaced. Picture 1 shows an overall view of the front retaining wall. Picture 2 shows the portion of the retaining wall that is showing the most cracking. A portion of the retaining wall has tipped. As the retaining wall continues along the southern side of the building its deflection increases. Picture 3 shows the wall, as seen from 4th street. There are also cracks that appear to go through the wall. Picture 4 shows one such crack.

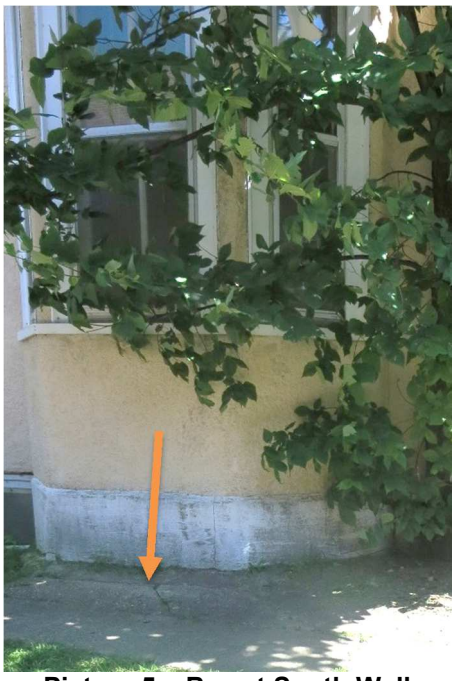
Picture 1 – Front Retaining Wall

Picture 2 – Front Retaining Wall

Picture 3 – South Retaining Wall

Picture 4 – Crack at South Retaining Wall

The bay along the south wall of the house appears to have settled. Picture 5 shows the bay and a crack that has occurred next to it. There is a tree that is growing just east of the bay. Its trunk is adjacent to the foundation wall. The tree is likely one cause of the settlement of the bay and could be the cause of other problems in the house. Picture 6 shows the base of the tree and the foundation wall. The background of Picture 4 shows the bay along with the tree as well.



Picture 5 – Bay at South Wall

Picture 6 – Tree Growing Next to House

There is some water damage to the house. The eastern section of the south foundation wall showed signs of damage and rot. Picture 7 shows some of the rot that has occurred as well as spalling of the finish material along the foundation and bulging of the stucco on the wall. Water damage effects were found in the floor of the second story of the house. Picture 8 shows some of the damage. It is likely that there is damage that allows water to leak. The roof was observed from the outside to be sagging slightly (not pictured). It is likely that there is some damage to the roof, which is causing water to enter the house.

Picture 7 – Water Damage at Southern Foundation Wall

Picture 8 – Water Damage in 2nd Floor

There are framing issues in the basement. There is a beam that does not rest on the column as it was originally designed. Picture 9 shows the beam as well as the column. The gap between the beam and the column is approximately 1 inch. The gap between the beam and column can be seen in the picture.

Picture 9 – Beam Above Column in Basement

Summary
The residence at 700 4th St. E. is in generally poor condition. As stated above, we made no attempt to remove finish material. Our opinions are based on what was in plain sight. The problems that were seen are likely more extensive than what we observed but were covered with finish materials. In addition to what was previously listed, there could be more issues that we could not observe. Repairs are possible, but it would likely be relatively costly. A more thorough structural review would be required in order to give details for the repair of any specific structural system.

Limiting Conditions:
The opinions and recommendations contained in this report are based on a cursory observation of the building. No attempt was made to perform an exhaustive investigation of all conditions and building elements. It is possible that conditions exist that cannot be discovered or judged as a result of this limited nature of investigation. The work provided in the preparation of the report concerns the structural system only and is not intended to address mechanical, electrical or plumbing systems, fire protection or handicap accessibility. The owner is encouraged to discuss these items with a building official and other design professionals for guidance and recommendations.

If you have any questions concerning the above, please do not hesitate to contact us.

Sincerely
Mattson Macdonald Young, Inc.

Travis Stanley

Travis Stanley, E.I.T.

Joe Cain

Joe Cain, P.E.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Joe Cain

Joe Cain, P.E.

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